

CLAIMS

What is claimed is:

1. A vehicle suspension system comprising:
a stabilizer bar connected to a vehicle wheel; and
at least one bushing positioned about said stabilizer bar including at least one passive structure, said passive structure interacting with said stabilizer bar to vary a level of stiffness of said stabilizer bar.
2. The vehicle suspension system as recited in claim 1 wherein said at least one passive structure is a void.
3. The vehicle suspension system as recited in claim 2 wherein said stabilizer bar compresses said void as said stabilizer bar twists to increase said level of stiffness of said stabilizer bar.
4. The vehicle suspension system as recited in claim 3 wherein said void is teardrop shaped.
5. The vehicle suspension system as recited in claim 3 wherein said void is arc shaped.
6. The vehicle suspension system as recited in claim 3 wherein said void is bone shaped.
7. The vehicle suspension system as recited in claim 3 wherein said void is wish bone shaped.

8. The vehicle suspension system as recited in claim 1 wherein said at least one passive structure is an outer layer of material positioned outwardly of an inner layer, said outer layer being substantially harder than said inner layer, said stabilizer bar pressing into said outer layer as said stabilizer bar twists to increase said level of stiffness of said stabilizer bar.
9. The vehicle suspension system as recited in claim 1 wherein said at least one passive structure is an insert, said stabilizer bar pressing onto said insert as said stabilizer bar twists to increase said level of stiffness of said stabilizer bar.
10. The vehicle suspension system as recited in claim 1 wherein a mounting bracket is positioned over said at least one bushing to secure said stabilizer bar to a vehicle frame.
11. The vehicle suspension system as recited in claim 1 wherein said at least one bushing is made of rubber.
12. The vehicle suspension system as recited in claim 1 wherein said passive structure extends along a length of said bushing.

13. A vehicle suspension system comprising:
a stabilizer bar connected to a vehicle wheel;
a vehicle frame; and
at least one bushing made of rubber positioned about said stabilizer bar including at least one passive structure, said passive structure extending along a length of said bushing and interacting with said stabilizer bar to vary a level of stiffness of said stabilizer bar, said stabilizer bar secured to said frame by a mounting bracket positioned over said at least one bushing.
14. The vehicle suspension system as recited in claim 13 wherein said at least one passive structure is a void.
15. The vehicle suspension system as recited in claim 14 wherein said stabilizer bar compresses said void as said stabilizer bar twists to increase said level of stiffness of said stabilizer bar.
16. The vehicle suspension system as recited in claim 13 wherein said at least one passive structure is an outer layer of material positioned outwardly of an inner layer, said outer layer being substantially harder than said inner layer, said stabilizer bar pressing into said outer layer as said stabilizer bar twists to increase said level of stiffness of said stabilizer bar.
17. The vehicle suspension system as recited in claim 13 wherein said at least one passive structure is an insert, said stabilizer bar pressing onto said insert as said stabilizer bar twists to increase said level of stiffness of said stabilizer bar.

18. The method for controlling a rate of a stabilizer bar of a vehicle suspension system comprising the steps of:

mounting a stabilizer bar to a vehicle with a bushing having a passing structure to vary a level of stiffness from a first level in response to initial twist and then to a higher level in response to additional twist;

axially twisting said stabilizer bar; and

varying a level of stiffness of said stabilizer bar from said lower level during initial twist to said higher lever after said initial twist.